AC Input /AC Output Module

Mini OCS/RCS

HE500OCS047 / HE500OCS077
HE500RCS077
120 VAC In, Positive Logic
3A Relay Out

1   SPECIFICATIONS

INPUT				
Inputs per Module	14		Input Impedance	0.01µF +10K
Commons per Module	3		Isolation (Channel to Common)	1500VDC
Input Voltage Range	120 – 160 VAC		Minimum ON Current	1mA.
Peak Voltage	160VAC		Maximum OFF Current	200µA.
AC Frequency	50 / 60Hz		OFF to ON Response	50ms.
ON Voltage Level	70VAC Min.		ON to OFF Response	50ms.
OFF Voltage level	30VAC Max.			

OUTPUT				
Outputs per Module	10 relay		Maximum Leakage Current	5µA
Commons per Module	2		Maximum Inrush Current	3A
Output Type	Relay		Minimum Load	None
Coil Voltage	18-30VDC		OFF to ON Response	6ms. Typical
Contact Voltage	250VAC / 30VDC Max.		ON to OFF Response	0.3ms. Typical
ON Voltage drop	0.2VDC max.		Isolation (Channel to Channel and Channel to Common)	2500VDC
Maximum Load current (resistive) per channel	3A			

General Specifications			
Required Power (Steady State)	4.8W (200mA @ 24VDC)	Operating Temperature	0° to 50° Celsius
Required Power (Inrush)	900mA max. @ 24VDC for 1ms.	Terminal Type	Spring Clamp, Removable
Relative Humidity	5 to 95% Non-condensing	Weight	9.5 oz. (270 g)
CE	See Compliance Table at http://www.heapg.com/Support/compliance.htm		
UL			

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2   WIRING

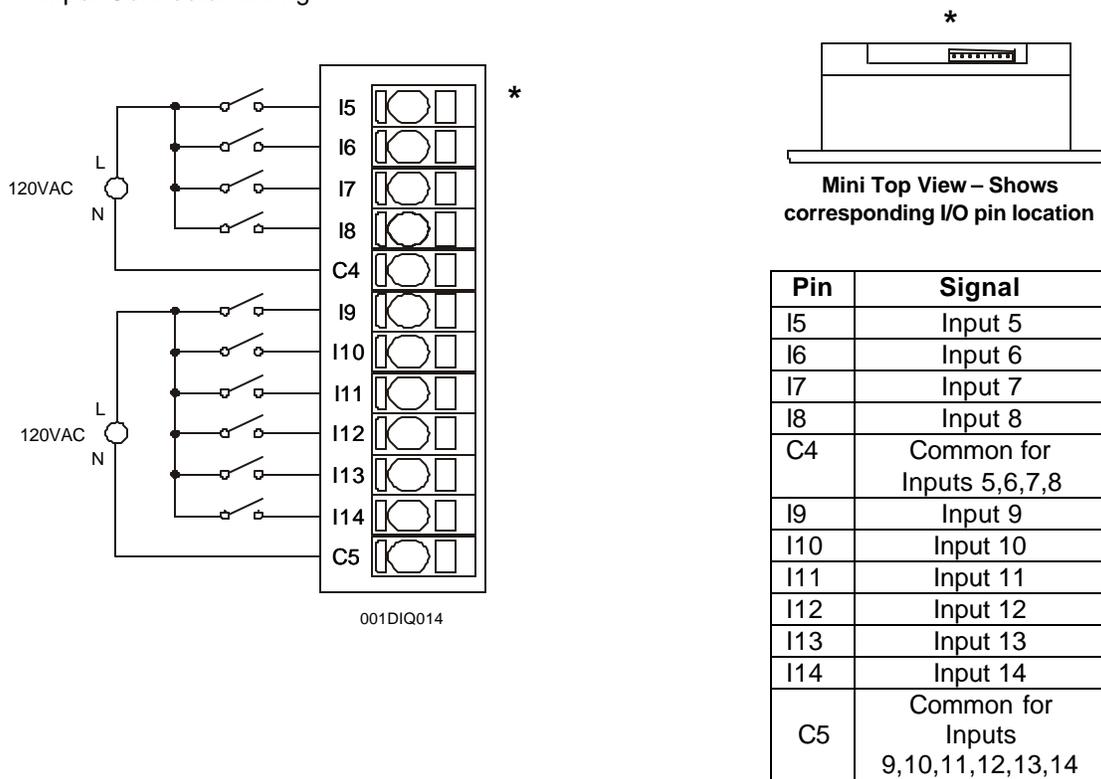2.1   Input / Output Connector Wiring

Mini Bottom View – Shows Corresponding I/O Pin
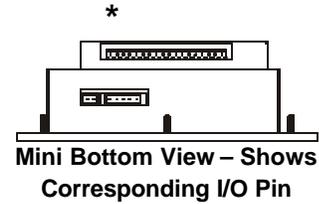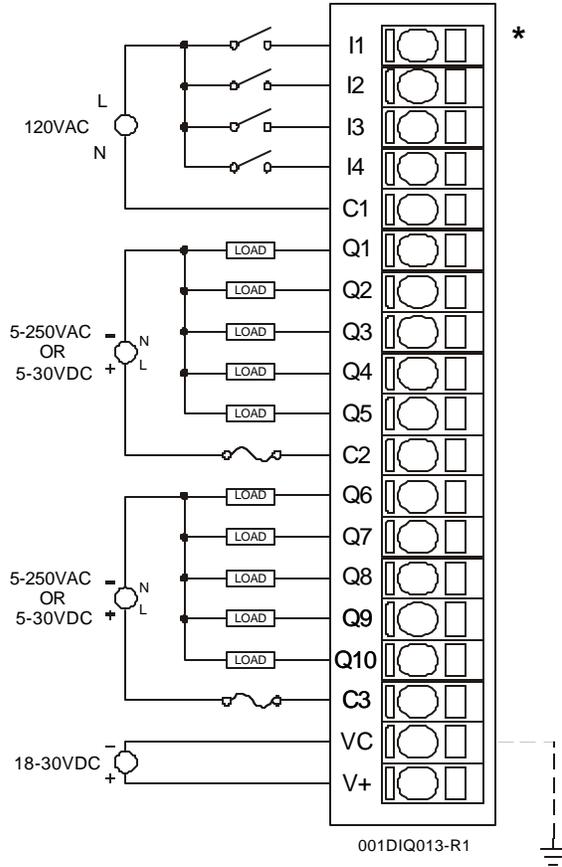
Pin	Signal
I1	Input 1
I2	Input 2
I3	Input 3
I4	Input 4
C1	Common for Inputs 1,2,3,4
Q1	Output 1
Q2	Output 2
Q3	Output 3
Q4	Output 4
Q5	Output 5
C2	Common for Outputs 1,2,3,4,5
Q6	Output 6
Q7	Output 7
Q8	Output 8
Q9	Output 9
Q10	Output 10
C3	Common for Outputs 6,7,8,9,10
VC	Relay Coil power common, connected to bus common internally.
V+	Relay Coil power + 18 to +30VDC, 90mA max.

001DIQ013-R1

Warning: To protect the module and associated wiring from load faults, use external **(10 A)** fuse(s) as shown. **This warning affects OCS047 / OCS077, Revisions E or higher and all versions of the Mini RCS077.**
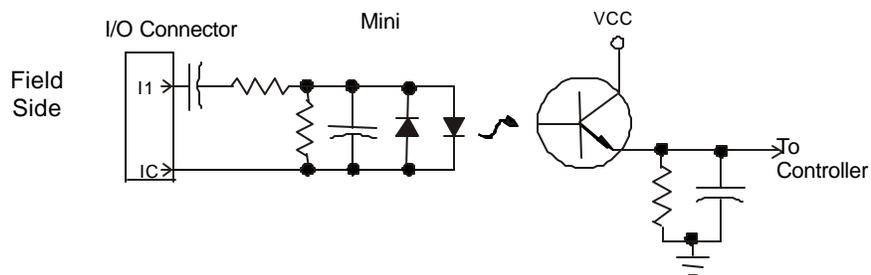
Warning: Connecting high voltage to any I/O pin may cause high voltage to appear at other I/O pins.
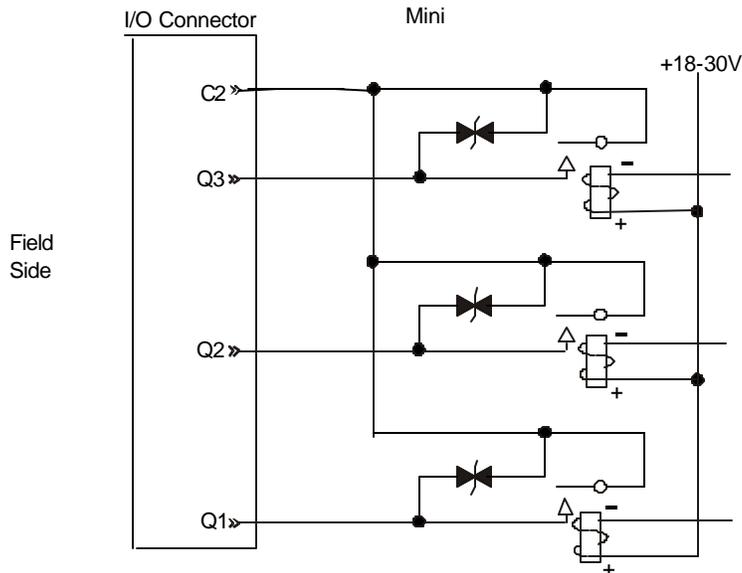
Warning: Wiring the line side of the AC source to loads connected to outputs 1 through 10 and the neutral side of the AC source to the output common(s) would create a Negative Logic condition, which may be considered an unsafe practice.

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2.2   Input Connector Wiring

001DIQ014

**Mini Top View – Shows
corresponding I/O pin location**

Pin	Signal
I5	Input 5
I6	Input 6
I7	Input 7
I8	Input 8
C4	Common for Inputs 5,6,7,8
I9	Input 9
I10	Input 10
I11	Input 11
I12	Input 12
I13	Input 13
I14	Input 14
C5	Common for Inputs 9,10,11,12,13,14

3   INTERNAL SCHEMATIC DRAWINGS

Specification for transient voltage suppressors (transorbs) used on output circuitry is 400V bi-directional 400W.

Note: Electro-mechanical relays comply with IEC1131-2.

4   CONFIGURATION

Note: The status of the I/O can be monitored in Cscape Software.

Selecting the **I/O Map** tab provides information about the I/O registers. The I/O Map is not edited by the user.

The **Module Setup** is used in applications where it is necessary to change the default states of the outputs when the controller (e.g., OCS100) enters idle/stop mode. The default turns the outputs OFF when the controller enters idle/stop mode. By selecting the Module Setup tab, each output can be set to either turn ON, turn OFF or to hold the last state. Generally, most applications use the default settings.

Warning: The default turns the outputs OFF when the controller enters idle/stop mode. To avoid injury of personnel or damages to equipment, exercise extreme caution when changing the default setting using the **Module Setup** tab.

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5   INSTALLATION / SAFETY

> **Warning:** Previous versions of this product provided internal fuses on the output circuits (relay contacts). Due to CE Low Voltage Directive (LVD) marking requirements, these fuses have been removed and replaced with solid wire. Therefore, it is now the responsibility of the user of this equipment to ensure that adequate fusing is installed *externally* on each relay output circuit.

a. All applicable codes and standards are to be followed in the installation of this product.
b. Use the following wire type or equivalent: Belden 8917, 16 AWG or larger.

When found on the product, the following symbols specify:

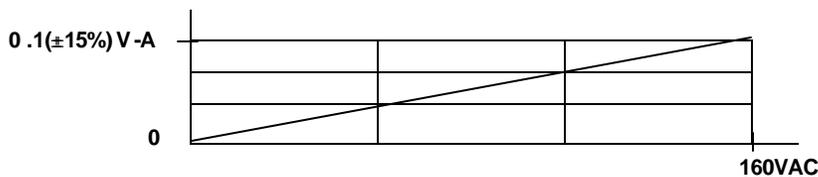**Warning:** Consult user documentation.

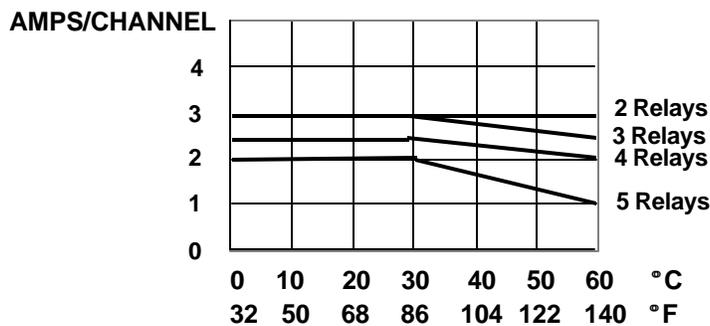**Warning:** Electrical Shock Hazard.

For detailed installation information, refer to Mini Hardware Manual. A <u>handy checklist</u> is provided that covers panel box layout requirements and minimum clearances.

6   INPUT / OUTPUT CHARACTERISTICS

Digital Input Chart

0 .1(±15%) V -A

0

160VAC

Derating Chart
(Each group of 5)

AMPS/CHANNEL

4
3   2 Relays
            3 Relays
2   4 Relays
1   5 Relays
0

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | °C |
| 32 | 50 | 68 | 86 | 104 | 122 | 140 | °F |

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Typical Relay Life				
Voltage (Resistive)	No Load	Load Current		
		1 Amp	2 Amp	3 Amp
30VDC	20 Million	600K	250K	125K
125VAC		750K	300K	150K
250VAC		500K	200K	100K

The following applies to applications in which two-wire proximity switches are used as sensors for discreet AC inputs. For these applications, an external resistor *or* resistor/capacitor combination must be added to each input as shown below. The resistor provides a small current to power the proximity switch. The resistor is not required for other types of proximity switches.

120VAC: 15K ohm, 2W resistor *or* 0.22µF metallized film capacitor rated for 120VAC service in series with 470 ohm, 0.5W resistor
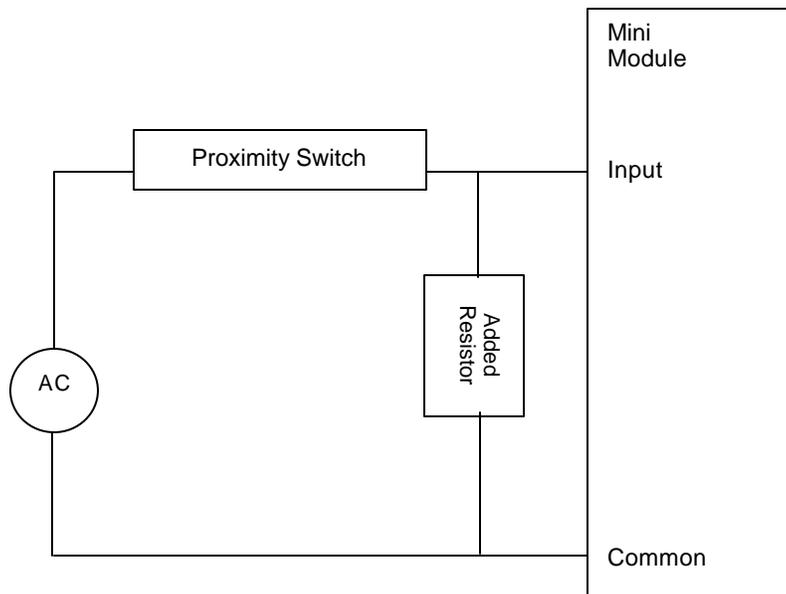
7   TECHNICAL SUPPORT

For assistance, contact Technical Support at the following locations.
Please visit our website for manual updates.

North America: **Europe:**
(317) 916-4274   (+) 353-21-4321-266
www.heapg.com   www.horner-apg.com